Assembly Line Design

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<u>Part I: Overview of Business</u> •Rockwell Collins - Manchester Branch •Founded in 1933 as Collins Radio, today, Rockwell Collins, Inc. designs, produces, markets and supports electronic communications, avionics and in-flight entertainment systems for commercial, military and government customers worldwide. •Headquarters is located in Cedar Rapids, IA with 30,000 employees working in 150 countries. •Iowa Locations include: Bellevue, Cedar Rapids, Coralville, Decorah, and Manchester. •Rockwell Collins in Manchester, Iowa opened January 10, 1977. It is known as the Active Matrix Liquid Crystal Display (AMLCD) Center of Excellence. AMLCDs are used in a host of display products across both commercial and military market segments.	<u>Part II: Job Specifics</u> •My main project was to assist with the transition of one step of the manufacturing process. •This step had recently been centralized to one location from multiple smaller locations. •My job was to help create an efficient process for this new centralized location and monitor and organize the upcoming workload to keep the process running efficiently.
<u>Part III: Introduce the Problem</u> •You are designing an assembly line to manufacture a wooden box for your autonoma toy. •How can you maximize production and eliminate waste? •What steps can you layout to assure the process continues to flow? •What will your plan be if a certain part(s) are unavailable?	<u>Part IV: Background</u> •The sides of the box are precut. •The basics of designing an assembly line. •There is not a limit on the number of operators on the assembly line. •There is a limit on space to operate in. •Cost needs to be a factor in your decision making. •What agreed upon quality standards the finish product will meet.
<u>Part V: Business Solution</u> •They have been working with operators to modify the work instructions. •They also used an excel tool to analyze data and help monitor operators production. •Once they have the operator production data, in addition to the timing of each step of the manufacturing process, the company is able to use a mathematical model to help determine staffing. •There are also cost analysis models that are run and discussed to help make decisions about how the process should run.	<u>Part VI: Student Solutions</u> •Fast process that may not be high enough quality. •Manufacturing processes that create bottlenecks. •They may also go with their first idea rather than analyzing the flow of the assembly line.